REMARKS

In this response, no claims have been amended, added, or cancelled. Hence, Claims 48-62 are pending in the application.

CORRECTION OF ATTORNEY DOCKET NUMBER IS REQUESTED

Applicants renew their request that the Attorney Docket Number associated with the present application be changed from "SUN-P7089" to "15437-0684."

SUMMARY OF THE REJECTIONS

Claims 48, 52, and 56 are rejected under 35 U.S.C. § 103(a) for allegedly being unpatentable over U.S. Patent No. 6,247,141 issued to Holmberg ("*Holmberg*") in view of U.S. Patent No. 6,247,141 issued to Breitbart et al. ("*Breitbart*"). Claims 49-51, 53-55, and 57-59 are rejected under 35 U.S.C. 103(a) for allegedly being unpatentable over *Holmberg* in view of *Breitbart* in view of U.S. Patent Application No. 2002/0174103 issued to Hsiao et al. ("*Hsiao*"). Claims 60-62 are rejected under 35 U.S.C. § 103(a) for allegedly being unpatentable over Holmberg in view of *Breitbart* in view of U.S. Patent No. 6,615,223 issued to Shih ("*Shih*").

Applicants respectfully traverse.

THE PENDING CLAIMS ARE PATENTABLE OVER THE CITED ART

Each of the pending claims recites a combination of elements that are not disclosed, taught, or suggested by the cited art.

Claim 48

Claim 48 recites:

> A method implemented by a secondary server to maintain a secondary directory, comprising:
> receiving notification from a primary server that a particular non-idempotent operation has been performed by the primary server on a primary directory;
> in response to the notification, performing the particular non-idempotent operation on the secondary directory such that the secondary directory mirrors the primary directory;
> receiving a request, from a client, to perform the particular non-idempotent operation on the secondary directory, wherein the client sends the request because the client has not received confirmation that the primary server has performed the particular non-idempotent operation on the primary directory;
> recognizing that the particular non-idempotent operation, identified in the request, cannot be performed on the secondary directory because the particular non-idempotent operation has already been performed on the secondary directory as a result of receiving the notification from the primary server; and
> in response to the recognition that the particular non-idempotent operation has already been performed on the secondary directory, the secondary server sending an indication to the client that the particular non-idempotent operation was successfully performed on the secondary directory even though the non-idempotent operation was not performed on the secondary directory after receiving the request.

None of the above elements are disclosed, taught, or suggested by *Holmberg* or *Breitbart*, either individually or in combination.

The approach of Claim 48

Claim 48 recites an advantageous method for maintaining a second directory. According to the approach of Claim 48, the secondary server receives a notification that a particular non-idempotent operation has been performed by a primary server on a primary directory. A non-idempotent operation is an operation that cannot be performed multiple times without producing a semantically different result than when performed once. In response to receiving the notification, the particular non-idempotent operation is

performed by the secondary server on the secondary directory such that the secondary directory mirrors the primary directory. The secondary server receives, from a client, a request to perform the particular non-idempotent operation on the secondary directory. The client sends the request because the client has not received confirmation that the primary server has performed the particular non-idempotent operation on the primary directory. The secondary server recognizes that the particular non-idempotent operation, identified in the request, cannot be performed on the secondary directory because the particular non-idempotent operation has already been performed on the secondary directory as a result of receiving the notification from the primary server. In response to the secondary server recognizing that the particular non-idempotent operation has already been performed on the secondary directory, the secondary server sends an indication to the client that the particular non-idempotent operation was successfully performed on the secondary directory even though the non-idempotent operation was not performed on the secondary directory after receiving the request.

Advantageously, the approach of Claim 48 enables a client to receive an indication that a requested non-idempotent operation was successfully performed by the secondary server on the secondary directory even though the non-idempotent operation was performed **before** the request from the client was received by the secondary server.

The approach of Holmberg

Such an approach is not disclosed or suggested by *Holmberg*. *Holmberg* teaches an approach for replicating information about the result of processing requests at a primary server ("primary server state information") to a backup server, so that if the primary server fails, the backup server can take over. In *Holmberg*, a client application

sends requests to a primary server. The primary server processes the requests, and sends a response back to the client application. The primary server may occasionally cause primary server state information to be sent to a backup server that subsequently stores the primary server state information. The transmission of primary server state information from the primary server to the backup server acts as a "heartbeat," thus, if the backup server does not hear from the primary server after a certain amount of time, the backup server will assume that the primary server has failed, and will initiate recovery procedures, e.g., it may become the primary server. (See Abstract, Col. 6, lines 29-57).

The primary server may also include primary server state information in the response sent from the primary server to the client application. Upon receiving the response, the client application automatically sends the primary server state information to the backup server. The backup server may acknowledge receipt of the primary server state information to the client application. In this way, the backup server receives primary server state information from both the primary server and the client application. (Col. 5, line 64 – Col. 6, line 19).

The approach of *Holmberg* is designed to maximize the amount of primary server state information sent to the backup server before the primary server fails. Thus, if the primary server fails before sending a set of primary server state information to the backup server, then backup server will still receive the primary server state information from the client application. In this way, when performing recovery procedures, the backup server may receive a copy of all the primary server state information up to when the primary server fails.

The approach of Breitbart

Breitbart is directed towards an approach for managing transactions in a distributed database system. In *Breitbart*, two versions of a data item are maintained – the "last certified version" and the "current version." All read-only transactions may be processed using the last certified version of a data item to ensure the read-only transaction can be processed without delay (see Abstract).

***Holmberg* and *Breitbart* Fail to Suggest Numerous Elements of Claim 48**

Claim 48 recites:

> "recognizing that the particular non-idempotent operation, identified in the request, cannot be performed on the secondary directory because the particular non-idempotent operation has already been performed on the secondary directory as a result of receiving the notification from the primary server"

The Office Action acknowledges that *Holmberg* fails to show this element (see page 3 of the Office Action), and instead, relies upon *Breitbart*. The portion of *Breitbart* cited to show this feature recites, *in toto*:

> When T_i submits a write operation on a secondary copy of a data item, the timestamp of T_i is compared to that of the transaction which executed the last write operation the [sic] same data item. If the T_i timestamp is less than that of the last write on the data item, the T_i write operation is not performed. Otherwise, the T_i write operation is sent to the local database management system for execution. (Col. 3, lines 47-53).

The portion of *Breitbart* cited above discusses actions performed in a static global serializability (SGS) protocol, which is a technique for performing concurrency control in a distributed database system (see Col. 3, lines 38-40). However, it is unclear how this teaching is analogous to the above-quoted element. Specifically, it is unclear what in the cited portion of *Breitbart* is analogous to (a) a request, received from a client, to perform a non-idempotent operation on a secondary directory, (b) a secondary directory as

claimed, (c) the particular non-idempotent operation as claimed, (d) a notification from the primary server as claimed, and (e) the primary server as claimed.

It is respectfully submitted that the above-cited portion of *Breitbart* fails to disclose, teach, or suggest this element. Nothing in the cited portion suggests recognizing that a particular operation cannot be performed on a directory, let alone recognizing that a particular non-idempotent operation cannot be performed on a directory because the particular non-idempotent operation has already been performed on the directory as a result of receiving notification from a primary server. Indeed, the above-cited portion of *Breitbart* fails to even suggest receiving any type of notification from a server.

At best, the above-cited portion of *Breitbart* teaches that if the T_i timestamp is less than that of the last write on the data item, the T_i write operation is not performed; however, this does not suggest the above claim element because, *inter alia*, (a) the T_i write operation is not performed on a directory, but to a secondary copy of a data item (see Col. 3, lines 48-49), and (b) the T_i write operation is not performed because it is less than that of the last write of the data item, and not because it is recognized that the T_i write operation has already been performed on a directory as a result of receiving notification from a primary server.

Consequently, *Breitbart* cannot possibly disclose, teach, or suggest the above-quoted element. If the Office disagrees, the Office is invited to particularly point out which portions of the above-cited portion of *Breitbart* are analogous to (a) a request, received from a client, to perform a non-idempotent operation on a secondary directory, (b) a secondary directory as claimed, (c) the particular non-idempotent operation as claimed, (d) a notification from the primary server as claimed, and (e) the primary server as claimed.

Claim 48 also recites:

> "in response to the recognition that the particular non-idempotent operation has already been performed on the secondary directory, the secondary server sending an indication to the client that the particular non-idempotent operation was successfully performed on the secondary directory even though the non-idempotent operation was not performed on the secondary directory after receiving the request"

The Office Action acknowledges that *Holmberg* fails to show this element (see page 3 of the Office Action), and instead, relies upon *Breitbart*. The above-cited portion of *Breitbart* (which was also cited to show the previously-discussed element of Claim 48) is also cited to show the above-quoted element.

As before, it is unclear how this teaching is analogous to the above-quoted element. Specifically, it is unclear what in this cited portion of *Breitbart* is analogous to (a) a recognition that a non-idempotent operation has already been performed on the secondary directory, (b) a secondary server, (c) the client as claimed, (d) the secondary directory as claimed, and (e) an indication that a non-idempotent operation was successfully performed on the secondary directory, even thought the non-idempotent operation was not performed on the secondary directory.

In particular, the above-cited portion of *Breitbart* lacks any suggestion of sending anything to any entity that indicates an operation was successfully performed, let alone suggesting a secondary server sending an indication to a client that a particular non-idempotent operation was successfully performed on a secondary directory even though the non-idempotent operation was not performed on the secondary directory after receiving the request from the client.

Consequently, *Breitbart* cannot possibly disclose, teach, or suggest the above-quoted element. If the Office disagrees, the Office is invited to particularly point out

which portions of the above-cited portion of *Breitbart* are analogous to (a) a recognition that a non-idempotent operation has already been performed on the secondary directory, (b) a secondary server, (c) the client as claimed, (d) the secondary directory as claimed, and (e) an indication that a non-idempotent operation was successfully performed on the secondary directory, even thought the non-idempotent operation was not performed on the secondary directory.

For at least the above reasons, it is respectfully submitted that Claim 48 features at least one element that is not disclosed, taught, or suggested by the cited art, either individually or in combination. Therefore, it is respectfully submitted that Claim 48 is patentable over the cited art and is in condition for allowance.

Claims 52 and 56

Independent Claims 52 and 56 feature elements similar to those discussed above with respect to Claim 48, except that Claims 52 and 56 are recited in machine-readable medium and a form expressly recognized by 35 U.S.C. § 112, paragraph 6 respectively. Consequently, for at least the above reasons discussed above with respect to Claim 48, it is respectfully submitted that Claims 52 and 56 each feature at least one element that is not disclosed, taught, or suggested by the cited art. Thus, each of Claims 52 and 56 are patentable over the cited art and are each in condition for allowance.

Claims 49-51, 53-55, and 57-62

Claims 49-51, 53-55, and 57-62 are dependent claims, each of which directly depends on one of the claims discussed above. Each of Claims 49-51, 53-55, and 57-62 is therefore allowable for the reasons given above for the claim on which it depends. In

addition, each of Claims 49-51, 53-55, and 57-62 introduces one or more additional limitations that independently render it patentable.

For example, Claims 60-62 each recite:

> "wherein said primary directory and said secondary directory are both LDAP directories."

The Office Action failed to explain why Claims 60-62 are disclosed, taught, or suggested by the cited art. In rejecting these claims, the Office Action merely rejects them over *Shih*, but provides no explanation as to why *Shih* teaches or suggests these elements. Further, the motivation to combine *Shih* with *Holmberg* and *Breitbart* appears not to refer to the combination of *Shih*, *Holmberg,* and *Breitbart*, but to another combination of references, as the alleged motivation to combine the references is "[it] would have been to reflect political, geographic, or organizational boundaries," which is not applicable to *Shih*, *Holmberg,* and *Breitbart*.

Applicants acknowledge that LDAP directories were known prior to the filing date of the present application. However, it is respectfully submitted that to show the features expressly claimed in Claims 60-62, not only must a LDAP directory be shown, but an LDAP directory that confirms to the features claimed in Claims 60-62, and any claims to which Claims 60-62 depend. Thus, while *Shih* may discuss a LDAP directory, *Shih* does not teach or suggest a LDAP directory that reflects the features of Claims 60-62.

Due to the fundamental differences already identified, to expedite the positive resolution of this case a separate discussion of limitations recited in further dependent claims is not included at this time.

CONCLUSION

For the reasons set forth above, it is respectfully submitted that all of the pending claims are now in condition for allowance. Therefore, the issuance of a formal Notice of Allowance is believed next in order, and that action is most earnestly solicited.

The Examiner is respectfully requested to contact the undersigned by telephone if it is believed that such contact would further the examination of the present application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any fee shortages or credit any overages to Deposit Account No. 50-1302.

Respectfully submitted,
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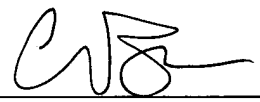

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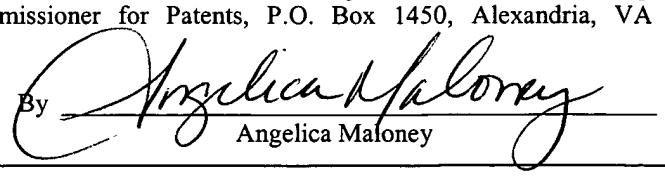
On March 6, 2006 By 
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